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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,207	06/21/2002	Lin-Kai Bu	HMOP0001USA	2827

27765 7590 08/26/2004

NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)  
P.O. BOX 506  
MERRIFIELD, VA 22116

EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

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DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/064,207

Applicant(s)

BU, LIN-KAI

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-19 and 21-25 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The Examiner has considered the information disclosure statement filed November 21, 2002; see attached PTO-1449.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Art (figures 1-2 and its related text; hereinafter referred to as APA) in view of Kajihara et al. (US patent NO. 6,677,923; hereinafter referred to as Kajihara).

As to independent claim 1, APA teaches method of driving a liquid crystal display (LCD) monitor, the LCD monitor comprising: an LCD panel (12) for displaying a plurality of pixels arranged in a matrix format; and a power supply (20) comprising a plurality of power transmission lines (lines carrying voltage Vcom in figure 2) for carrying a plurality

of voltages (Vcom), the power transmission lines of the power supply being electrically coupled to a plurality of driving units (DL3 to DL8 in figure 2), each driving unit comprising an output buffer (44 to 49) (paragraphs NO. 6-7 in page 2 of the specification).

APA does not expressly teaches a switch connected to each output buffer, and wherein the first end of the switch is connected to the output terminal of the output buffer for driving an output voltage of the driving unit toward a voltage transmitted via the power transmission line of the power supply, and connecting the first end of the switch to the input terminal of the output buffer for driving the output voltage of the driving unit toward an average voltage generated from averaging voltages at the output terminals of the driving units.

However, Kajihara teaches liquid crystal drivers for driving a liquid crystal display panel that are low in power consumption (col. 1, lines 7-11), wherein as can be seen in figure 6, a switch 41 connected to each one of the buffers (12 & 13), and wherein the switch (41) is connected to output terminal of the buffer (12 or 13) for driving an output voltage of the driving unit toward a voltage transmitted via the transmission power line, and connecting the end of the switch to the input of the buffer (col. 16, lines 5-38).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Kajihara having switches located in the output side of the buffers to be incorporated to APA's device so as motivated by Kajihara, to produce a good quality display on the liquid crystal display by having the surge of current possibly occurring in the standard voltage generator (i.e.,

power supply) come to a steady state at the desired tone display as soon as possible (col. 17, lines 11-26).

As to claim 2, as can be seen in figure 2 of APA, the output buffer further comprises an operational amplifier (37).

As to claim 3, the transconductance amplifier disclosed in the specification simply replaces the operational amplifier, with no indication of any advantage over the operational amplifier. Therefore, using transconductance is merely designer choice based on the required specific uses.

As to claim 4, as discussed above, Kajihara shows the switch 41 connects between the output of the buffer and the voltage or the input of the buffer and the voltage, which fairly reads on the claimed limitations of claim 4.

As to claim 5, Kajihara shows that the driving units that are connected to the same voltage transmitted via the corresponding power transmission line of the power supply simultaneously drive the pixels located in a row of the LCD panel toward a target level after the first end of the switch is connected to the input terminal of the output buffer (see figure 6 and col. 16, lines 32-45).

As to claim 6, Kajihara shows that the voltage transmitted via the power transmission line of the power supply is generated by a voltage divider (7 shown as voltage divider in figures 3 and 6).

As to claim 7, APA (figure 2) shows that the power supply further comprises a plurality of multiplexers (MUX) each electrically connected to one of the driving units and the power transmission lines, and the multiplexer is used for selecting a current

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route connecting the driving unit and one of the power transmission lines (paragraph NO. 7 in page 3).

As to claim 20, the claim is device corresponds to the method of claim 1 and would be analyzed as previously discussed with respect to claim 1.

### ***Allowable Subject Matter***

5. Claims 8-19 and 21-25 are allowed.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Masuko (US patent NO. 5,729,246) teaches a liquid crystal display device that includes an operational amplifier.

Tanaka (US patent NO. 6,426,670) teaches a power circuit with comparators.

Udo et al. (US. Patent NO. 6,747,624) teaches a driving method for supplying tone voltages to liquid crystal display panel.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
8-21-2004

A.A.